

I Claim:

1. In a vehicle of the type having an engine compartment and a passenger compartment, an engine cooled by a liquid coolant which is circulated by a water pump through the engine, a heating conduit, a heater core in communication with an air plenum, a vehicle
5 electrical system including a battery, a heater fan in the passenger compartment for circulating air through the heater core and into the passenger compartment, the improvement comprising an after-run heating system kit for continuing heating of the passenger compartment after the engine has been shut off, comprising:

a first control circuit for mounting in the engine compartment and a second
10 control circuit for mounting in the passenger compartment, the first control circuit having a plurality of one of removable electrical plugs or connector receptacles, the second control circuit having a plurality of the other of removable electrical plugs or connector receptacles, the plugs and receptacles being removably engageable with one another for selectably installing an interconnected after-run heating system by electrically connecting the first and second control
15 circuits to one another;

a pump control circuit having a plurality of said other of removable electrical plugs or connector receptacles so as to be selectably electrically connectable to the first control circuit; and

an air thermostat having a plurality of said one of removable electrical plugs
20 or connector receptacles so as to be selectably electrically connectable to the second control circuit, the pump control circuit and air thermostat being installed if a divided after-run heating system is desired.

2. The kit of claim 1 further characterized in that the first control circuit is a pump/thermostat control circuit located in the engine compartment of the vehicle and includes an auxiliary pump disposed in the heating conduit and controlled by the pump/thermostat control circuit for pumping heated engine coolant through the heater core of the vehicle after the engine has been turned off.

3. The kit of claim 2 further characterized in that the second control circuit is a fan control circuit located in the passenger compartment of the vehicle and controls operation of the heater fan after the engine has been turned off.

4. The kit of claim 3 further characterized in that the pump control circuit is adapted for mounting in the engine compartment, and is connectable to the vehicle electrical system and to the first control circuit for controlling operation of the auxiliary pump while being free of mechanical, electrical or electromagnetic interconnection to the fan control circuit.

5. The kit of claim 1 further characterized in that the second control circuit is a fan control circuit which controls operation of the heater fan after the engine has been turned off.

6. The kit of claim 1 further characterized in that the air thermostat is mountable in the air plenum for sensing the temperature of air flowing into the passenger compartment.

7. The kit of claim 1 further comprising a seasonal on-off switch having a pair of said one of removable electrical plugs or connector receptacles selectably connectable to said other of removable electrical plugs or connector receptacles of the pump control circuit.

5 8. The kit of claim 1 further comprising an ambient temperature sensor having a pair of said one of removable electrical plugs or connector receptacles selectably connectable to said other of removable electrical plugs or connector receptacles of the pump control circuit.

10 9. The kit of claim 1 further characterized in that the second control circuit is a fan control circuit which controls operation of the heater fan after the engine has been turned off and further comprising a relay between the second control circuit and the heater fan.

15 10. In a vehicle of the type having an engine compartment and a passenger compartment, an engine cooled by a liquid coolant which is circulated by a water pump through the engine, a heating conduit, a heater core in communication with an air plenum, a vehicle electrical system including a battery, a heater fan in the passenger compartment for circulating air through the heater core and into the passenger compartment, the improvement comprising an after-run heating system kit having a first set of components mountable in the engine compartment, and a second set of components mountable in the passenger compartment, the first and
20 second sets of components being arranged so as to be installable either as a divided system or as an interconnected system.

11. The kit of claim 10 further characterized in that the first set of components includes a pump/thermostat control circuit and an auxiliary pump disposed in the heating conduit and controlled by the pump/thermostat control circuit for pumping heated engine coolant through the heater core of the vehicle after the engine has been turned off.

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12. The kit of claim 11 further characterized in that the second set of components includes a fan control circuit which controls operation of the heater fan after the engine has been turned off.

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13. The kit of claim 12 further comprising a pump control circuit adapted for mounting in the engine compartment, the pump control circuit being connectable to the vehicle electrical system and to the first control circuit for controlling operation of the auxiliary pump while being free of mechanical, electrical or electromagnetic interconnection to the fan control circuit.

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14. The kit of claim 12 further comprising a relay between the second control circuit and the heater fan.

15. The kit of claim 10 further characterized in that the second set of components includes a fan control circuit which controls operation of the heater fan after the engine has been turned off.

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16. The kit of claim 10 further comprising an air thermostat mountable in the air plenum for sensing the temperature of air flowing into the passenger compartment.

17. In a vehicle of the type having an engine compartment and a passenger compartment, an engine cooled by a liquid coolant which is circulated by a water pump through the engine, a heating conduit, a heater core in communication with an air plenum, a vehicle electrical system including a battery, a heater fan in the passenger compartment for circulating air through the heater core and into the passenger compartment, the improvement comprising a method of installing an after-run heater in either a divided or interconnected system, comprising the steps of:

mounting a first control circuit in the engine compartment;

mounting a second control circuit in the passenger compartment;

electrically connecting the first control circuit directly to the second control circuit if an interconnected after-run heating system is desired;

mounting a pump control circuit in the engine compartment and electrically connecting it to the first control circuit if a divided after-run heating system is desired; and

mounting an air thermostat in the passenger compartment and electrically connecting it to the second control circuit if a divided after-run heating system is desired.